

REMARKS

Claims 1-35 are pending in this application. Claims 1-35 are examined in the present Office Action. Applicants are amending herewith Claims 1, 10-13 and 22. Support for these amendments can be found generally throughout the specification. Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and the following remarks.

The Office Action:

Claims 1, 20 and 29-35 were rejected under 35 U.S.C. § 102(b) as being completely anticipated and unpatentable over the patent to Kuzuhara et al. (JP 10292084). Alternately, Claims 1, 20 and 29-35 were rejected under 35 U.S.C. § 103(a) as being obvious and unpatentable in view of the patent to Kuzuhara et al. Claims 1, 20 and 29-35 were rejected under 35 U.S.C. § 102(b) as being completely anticipated and unpatentable over the patent to Furuta et al. (JP 11322812). Alternately, Claims 1, 20 and 29-35 were rejected under 35 U.S.C. § 103(a) as being obvious and unpatentable in view of the patent to Furuta et al. Claims 1-35 were also provisionally rejected under the judicially created doctrine of obviousness-type double patenting in view of Claims 1-29 of copending application Serial No. 09/579,843. Applicants respectfully traverse the foregoing rejections.

The Rejection Under 35 U.S.C. § 102:

Claims 1, 20 and 29-35 were rejected under 35 U.S.C. § 102(b) as being completely anticipated and unpatentable over the patent to Kuzuhara et al. The rejection states that Kuzuhara et al. discloses a process in which derivatized polyethylene oxide is polymerized in the presence of methacryloxypropyltrimethoxymethylsilane. The examiner acknowledges that Kuzuhara et al. does not disclose grafting, but contends that such would be inherent. With regard to moisture crosslinking, the rejection states that the material is

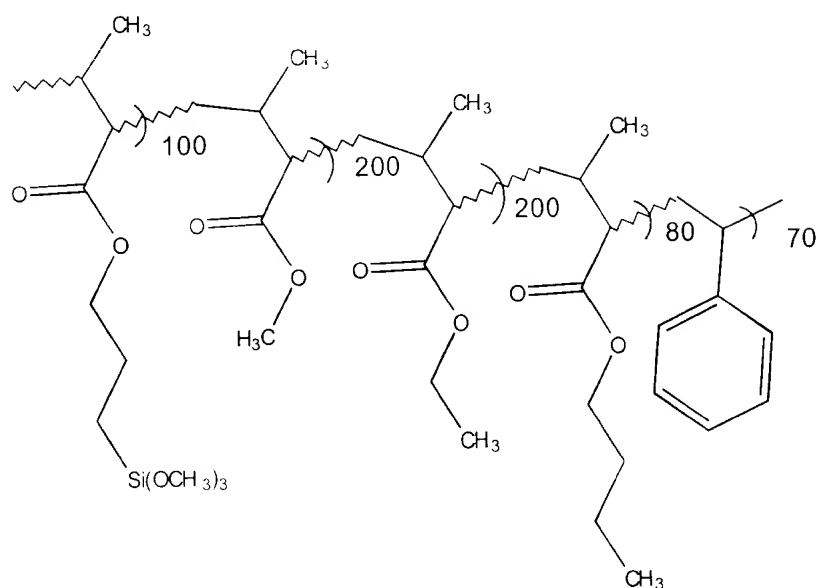
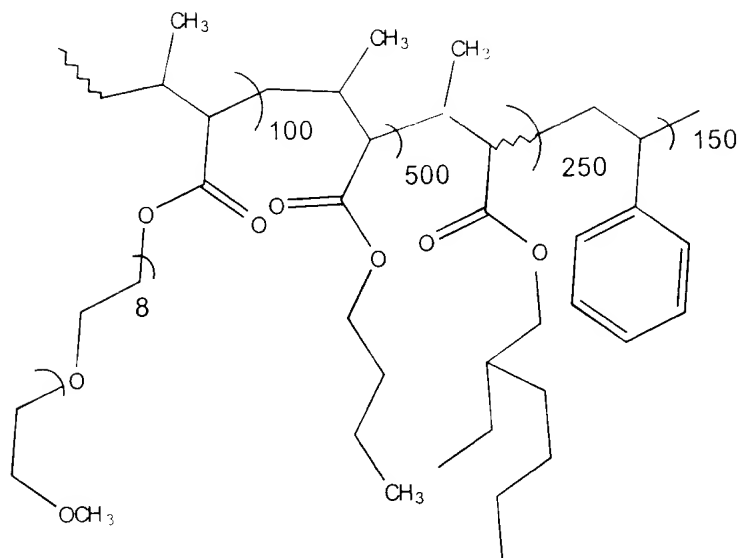
exposed to moisture and further contends that crosslinking would be inherent. The rejection states that "gel content" refers to insoluble material and the material of Kuzuhara et al. is resistant to dissolving. The rejection concludes that the material of Kuzuhara et al. is highly crosslinked, and, therefore, has a very high gel content. The rejection further concludes that when the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether the reference inherently possesses properties that anticipate or render obvious the claimed invention, basis exists for shifting the burden to the applicant. Applicants respectfully traverse the foregoing rejection.

An examination of Kuzuhara et al. indicates that the chemistry is significantly different from the present invention, and, in fact, teaches away from the invention. Kuzuhara et al. uses a derivatized poly(ethylene oxide), methoxypolyethylene glycol monomethacrylate (PME 400). This is a methacrylate monomer with a short ethylene oxide side chain -- about 9 ethylene oxide units based on a molecular weight of about 400. In contrast, the present invention uses a non-derivatized poly(ethylene oxide) with 2000 to 200,000 ethylene oxide units based on a molecular weight of 100,000 to 10,000,000.

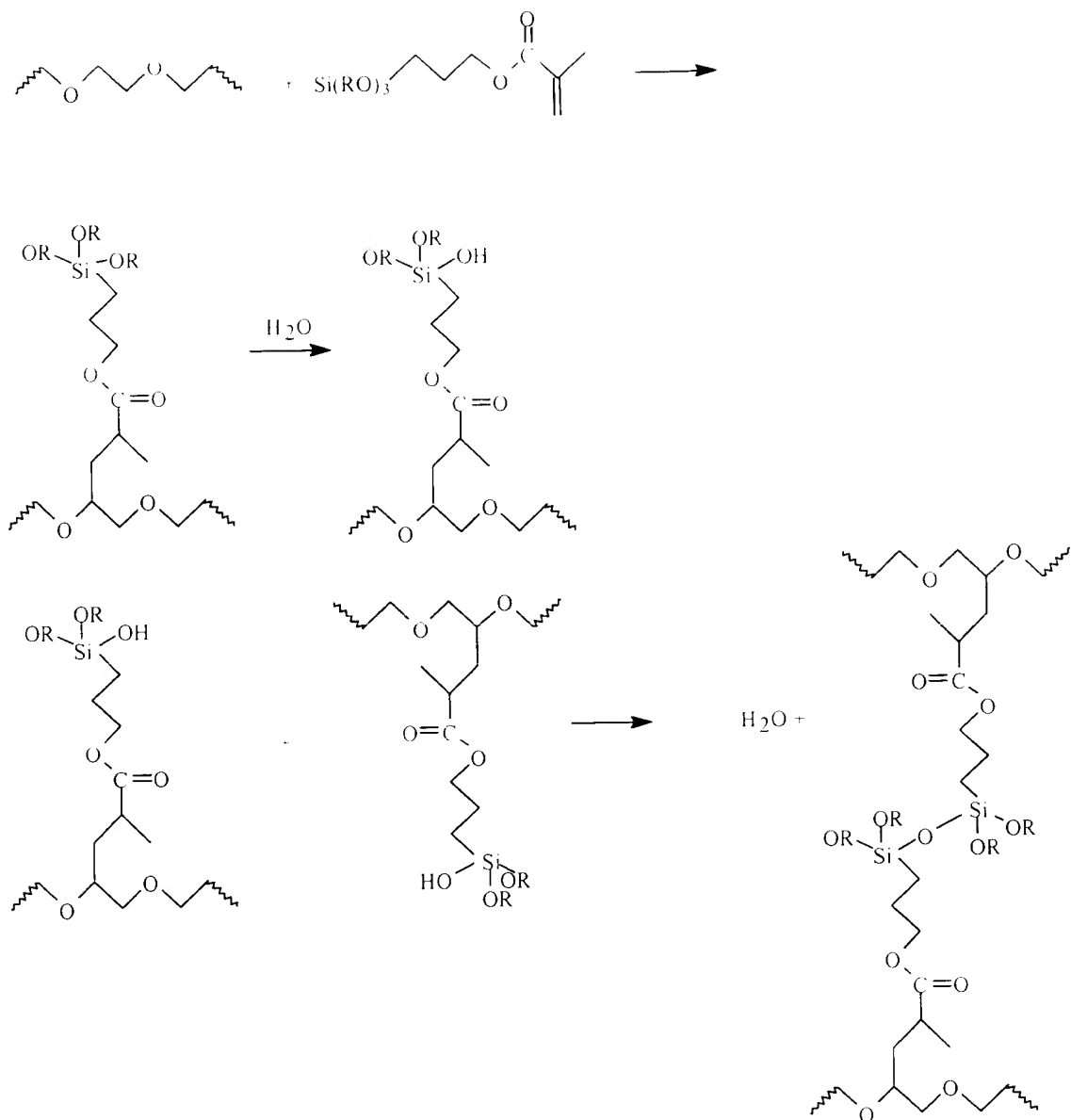
Kuzuhara et al. prepares two polymers sequentially. The first is a methacrylate copolymer that contains the PME 400. The PME 400 is said to function as a dispersion stabilizer. The other monomers are very hydrophobic acrylate ester and styrene. The resultant copolymer has 100 parts of the hydrophilic PME 400 and 900 parts of the hydrophobic monomers. After this polymerization, a second copolymer is prepared which has the methacryl alkoxy silane along with a substantial amount of hydrophobic monomers. Kuzuhara et al. uses 100 parts of methacryl alkoxy silane monomer and 550 parts of hydrophobic monomers.

This combination of polymers, in an organic solvent, is combined with a tin catalyst and sprayed onto a steel surface to provide **resistance** to water and humidity. The water resistance is imparted from the substantially hydrophobic coating that forms. Secondly, the alkoxy silane component is included to react with the steel surface to provide good bonding. (Alkoxy silanes are well known to react with oxide and hydroxide surfaces by means of Si-O-surface bonds.) The probability of the methacryl alkoxy silane grafting onto the very small amount of poly(ethylene oxide) side chain is extremely low since there is a much higher concentration of vinyl monomers present for methacryl alkoxy silane to react with. Since the abstract says explicitly that the PME 400 is used to **stabilize** the dispersion, there would be no motivation to have the methacryl alkoxy silane react with the PME 400 to form a cross-linked polymer. Furthermore, the formation of a crosslinked polymer in Kuzuhara et al. would cause the polymer to fall out of solution rather than remain dispersed. Thus, Kuzuhara et al. clearly teaches away from forming a crosslinked polymer.

The structures of the two polymers prepared by Kuzuhara are shown below.



In contrast, a disclosed embodiment of the polymer of the present invention is as follows:



The present invention provides a hydrophilic polymer that is capable of crosslinking in the presence of water to form a water-absorbent material. Kuzuhara et al. has a hydrophobic polymer capable of bonding to a metal or oxide surface that is inert to water. Since Kuzuhara et al. does not disclose all of the elements of the present claims, it cannot anticipate the claims. Thus, it is respectfully submitted that the present invention is not

anticipated by Kuzuhara et al. Accordingly, applicant requests that the rejection of Claims 1, 20 and 29-35 under 35 U.S.C. § 102(b) in view of Kuzuhara et al. be withdrawn.

Claims 1, 20 and 29-35 were also rejected under 35 U.S.C. § 102(a) as being completely anticipated and unpatentable over the patent to Furuta et al. The rejection states that Furuta et al. discloses a process in which a derivatized polyethylene oxide is polymerized in the presence of gamma-methacryloxypropyltrimethoxysilane using a persulfate initiator. Again, the rejection acknowledges that Furuta et al. does not disclose grafting. However, the rejection concludes that grafting would be inherent since Furuta et al. polymerizes the polyethylene oxide-containing materials in the presence of an unsaturated silane with a free radical initiator. With respect to crosslinking, the rejection merely states that the material is exposed to moisture and weathering. The rejection concludes that when the reference discloses all the limitations of a claim except a property or function, and the Examiner cannot determine whether the reference inherently possesses properties that anticipate or render obvious the claimed invention, basis exists for shifting the burden to the applicant. Applicants respectfully traverse the foregoing rejection.

The Furuta et al. patent is quite similar to the Kuzuhara et al. patent. Although Furuta et al. uses methacryl alkoxysilane monomer, it is combined with other acrylate monomers to form a copolymer. Furthermore, the only poly(ethylene oxide) component present in Furuta et al. is part of a surfactant used as a dispersion stabilizer (Aqualon HS 10 is described as a polyethylene oxide nonylphenyl ether sulfate). Thus, the polyethylene oxide component of Furuta et al. is a surfactant, not a polymer. Since Furuta et al. does not disclose all of the elements of the present claims, it cannot anticipate the claims. Thus, it is respectfully submitted that the present invention is not anticipated by Furuta et al.

Accordingly, applicant requests that the rejection of Claims 1, 20 and 29-35 under 35 U.S.C. § 102(a) in view of Furuta et al. be withdrawn.

The Rejection Under 35 U.S.C. § 103:

Claims 1, 20 and 29-35 were also rejected under 35 U.S.C. § 103(a) as being obvious and unpatentable over the patent to Kuzuhara et al. The reasons for this rejection are the same as those set forth above with respect to the rejection under 35 U.S.C. § 102(b). Applicants respectfully traverse this rejection.

Applicants incorporate herein the arguments set forth above with respect to the improper rejection of the claims under 35 U.S.C. § 102(b) in view of Kuzuhara et al. Kuzuhara et al. does not disclose or suggest the present invention. Furthermore, Kuzuhara et al. does not provide any motivation for modifying its own the express teaching. Thus, applicants submit that Claims 1, 20 and 29-35 are not obvious in view of Kuzuhara et al. and respectfully request that such rejection be withdrawn.

Claims 1, 20 and 29-35 were also rejected under 35 U.S.C. § 103(a) as being obvious and unpatentable over the patent to Furuta et al. The reasons for this rejection are the same as those set forth above with respect to the rejection under 35 U.S.C. § 102(a). Applicants respectfully traverse this rejection.

Applicants incorporate herein the arguments set forth above with respect to the improper rejection of the claims under 35 U.S.C. § 102(a) in view of Furuta et al. Furuta et al. does not disclose or suggest the present invention. Furthermore, Kuzuhara et al. does not provide any motivation for modifying its own the express teaching. Thus, applicants submit that Claims 1, 20 and 29-35 are not obvious in view of Furuta et al. and respectfully request that such rejection be withdrawn.

The Provisional Double Patenting Rejection:

Claims 1-35 were provisionally rejected under the judicially created doctrine of double patenting of the obviousness-type in view of Claims 1-29 of copending application Serial No. 09/579,843. Since application Serial No. 09/579,843 has not issued as a patent, applicant submits that no response to this provisional rejection is required and the provisional rejection cannot form a basis for denying allowance of the present claims.

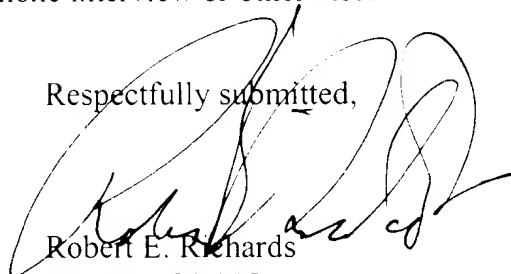
Non-rejected Claims:

Claims 2-19 and 21-28 were not rejected on any grounds except the provisional rejection noted above. Accordingly, applicants submit that Claims 2-19 and 21-28 should be indicated as allowed.

Conclusion:

Applicants respectfully request reconsideration of the present application in view of the foregoing remarks. Such action is courteously solicited. Applicants further request that the Examiner call the undersigned counsel if allowance of the claims can be facilitated by examiner's amendment, telephone interview or otherwise.

Respectfully submitted,



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Our Docket: 11302-0681 (44040-228302)
KC File: 14,954